Tukituki Land Care

Papanui SUB-CATCHMENT PLAN: SUMMARY

PAPANUI AT A GLANCE

The Papanui catchment spans approximately 16,400ha, stretching from just north of Waipawa to Te Aute Hill, south of Lake Poukawa. Once home to expansive wetlands and lakes, the catchment is now a basin dominated by productive agricultural landscapes supporting sheep, beef, dairy, and various cropping systems.

Historically, the Papanui catchment was an area of mahinga kai for Māori, providing resources such as freshwater mussels, birds, and flax. The catchment's resource-rich landscape supported numerous pā,

many of which were located along waterways and the shores of Lake Roto-ā-Tara. Five marae continue to represent the mana whenua of the area. These marae remain focal points for the community.

European settlement in the 19th century brought extensive modification to the landscape. Following major flooding, a stop bank was built along the Waipawa River, wetlands were drained, and forests were cleared to create farmland. Lake Roto-ā-Tara, once a major feature of the catchment, was drained to reclaim fertile peatlands for agriculture. These changes have shaped the catchment's present form but also left lasting environmental impacts.





84 percent of the catchment is in pasture, ten percent in arable and five percent in exotic forest. Notably, less than one percent of landcover is in native vegetation. "Tukituki Land Care (TLC) is tackling the big issues sub-catchment by sub-catchment, to piece together The Big Picture."



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FACEBOOK: TUKITUKI LAND CARE

PAPANUI CATCHMENT: CONTEXT

LANDSCAPE CONTEXT

SMAP SOIL ORDER - PAPANUI

The Papanui catchment is dominated by flat country in the centre of the catchment with rolling to steep country in the west. Historically, the central catchment would have been wetland areas, which has left behind fertile flat Pallic, Gley and organic soil. The topography and soils have a particular way in which they interact with nitrogen and phosphorus. The soils left behind by wetlands will have a low nitrogen loss profile and will often denitrify nitrogen rich water. However, they also have a reduced ability to bind phosphorus to the soil, meaning phosphorus will easily leave the soil once in contact with water.

The north and western parts of the catchment would be categorised as hill-country, and susceptible to erosion. Much of the phosphorus lost in a catchment will be attached to soil and dung and be released as erosion in rainfall events.

FOR MORE INFORMATION HEAD TO WWW.TUKITUKILANDCARE/PAPANUI

WATER QUALITY

Water quality is one of the biggest challenges the catchment faces. High levels of phosphorus in waterways contributes to poor water health and encourage excessive aquatic plant growth, which clogs streams and lowers oxygen levels, impacting freshwater life. On top of this, flooding has become a significant concern in the catchment. This was highlighted during Cyclone Gabrielle in 2023, with widespread damage to farmland and infrastructure.

Water Quality Parameter	Papanui	Standard
Nitrogen (DIN)	0.717 mg/ L	0.8
Phosphorus (DRP)	0.164 mg/ L	0.015
Bacteria (E.coli)	150 (count)	260
Freshwater invertebrates (MCI)	57.3 (index)	100
Sediment (Turbidity)	2.8 mg/ L	5.6 FNU (light)



AND CHALLENGES

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COMMUNITY IN ACTION

To date the community has made great progress. Over 88 percent of the catchment is now covered by Farm Environment Management Plans (FEMPs), helping farmers meet water quality regulations and adopt better practices.

In 2018, nearly 4,500 native seedlings were planted along waterways to improve stream health and control weeds. Pukehou and ōtāne Schools have supported the catchment community, with students getting involved in riparian planting and stream monitoring. These initiatives are helping to restore the health of the Papanui Stream and its connections to the broader Tukituki River ecosystem, while also ensuring the land remains economically viable and is celebrated for its rich heritage.

At a TLC Papanui catchment workshop in December 2024, attendees reflected on their progress as a catchment group and their efforts in addressing water quality and ecological challenges. Since developing the catchment's initial strategy in 2015, the group has focused on finding practical solutions tailored to the catchment's specific challenges. During the workshop, attendees reaffirmed the relevance of the strategy's objectives, highlighting the importance of communitydriven actions, celebrating successes, and encouraging a sense of ownership among landowners and stakeholders.











ADDITIONAL CHALLENGES

Regulatory changes, community involvement, and ecosystem health remain key challenges. Shifting consenting requirements, including changes to dissolved inorganic nitrogen (DIN) limits and the removal of OVERSEER, have created regulatory uncertainty. Ecosystem health concerns persist, with biodiversity loss, excessive seasonal instream plant growth, and invasive aquatic plants affecting waterway health.

PAPANUI CATCHMENT: SUMMARY AND ACTIONS

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WANT MORE DETAIL? HEAD TO WWW.TUKITUKILANDCARE/PAPANUI

Check out the online TLC Farmer Toolbox www.tukitukilandcare.org/toolbox

PAPANUI CATCHMENT: NEXT STEPS

- Get involved with the Papanui Catchment Group to review The TLC Catchment Plan and build on baseline work, share knowledge and coordinate actions.
- Address water quality issues, in particular P and N. Improve water quality monitoring to fill data gaps. Use <u>TLC's On-Farm Action Planning Tool</u>*.
- Develop erosion management strategy. Consider poplar planting, oversowing with legumes, strategic fencing to retire or manage grazing, and native or exotic afforestation. Use <u>TLC's</u> <u>Surface Erosion Tool</u>*, <u>TLC's On-Farm Action Planning Tool</u>* and <u>TLC's Plant Selection Tool</u>*.
- Identify potential sites for wetlands, dams or detention bunds. Use <u>TLC's Water Runoff Mapping</u> <u>Tool</u>*.
- Develop a planting strategy tailored to suit both flood-prone and dryland areas, ensuring resilience across different landscapes. Use <u>TLC's Plant Selection Tool</u>*.
- Limit the spread of invasive plants such as glyceria maxima and cow cress with particular attention to preventing further dispersal.
- Continue to involve local schools and marae to grow community engagement.
- Connect with <u>local advisors</u>* for tailored advice and potential funding opportunities.
- Commit to TLC's THR3E: three practical steps you can implement on your farm over the next three years.

* The TLC Toolbox and the full catchment report are now available on the TLC website www.tukitukilandcare.org